

FACTORS THAT DRIVE GREEN BUILDING IMPLEMENTATION AND THE
COST IMPACT OF GREEN BUILDING IMPLEMENTATION

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GREEN BUILDING IMPLEMENTATION AND THE COST IMPACT

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SUPERVISOR'S DECLARATION

I hereby declare that I have checked this project and in my opinion this project is adequate in term of scope and quality for the award of the Degree In Project Management

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STUDENT DECLARATION

I hereby declare that the work in this thesis is my own except for quotations and summaries which have been duly acknowledged. The thesis has not been accepted for any degree and is not concurrently submitted for award of other degree.

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TABLE OF CONTENT

	PAGES
SUPERVICOR’S DECLARATION	i
STUDENT DECLARATION	ii
ACKNOWLEDGEMENT	iii
ABSTRACT	iv
TABLE OF CONTENT	vi
LIST OF TABLE	x
LIST OF FIGURE	xiii
CHAPTER 1 INTRODUCTION	
1.0 Introduction	1
1.1 Problem Statement	3
1.2 Objectives	5
1.3 Research Methodology	5
1.3.1 Preliminary Research Stage	5
1.3.2 Data Collection Stage	5
1.3.3 Data Analysis Stage	6
1.3.4 Proposed Stage	6
1.4 Scope And Limitation	7
1.5 Significant Of Study	7
1.6 Summary	7

CHAPTER 2 LITERATURE REVIEW

2.0	Introduction	8
2.1	Sustainable Development	8
2.2	Aspect Of Sustainable Development	9
2.3	Green Building Concept	11
2.3.1	Purpose Of Green Building	12
2.3.2	Green Building As A New Concept	13
2.3.3	Green Building Index	14
2.4	Factors That Drive The Green Building Practices	15
2.4.1	Analysis Of Drive Factors Of Green Building	16
2.5	The Issues Of Cost	20
2.6	Cost Of Green Building	21
2.6.1	Budgeting Methodology For Green Building	22
2.7	Cost Impact	23
2.8	Financial Benefit Of Green Building	28
2.9	Summary	29

CHAPTER 3 RESEARCH METHODOLOGY

3.0	Introduction	30
3.1	Research Design	31
3.1.1	Stage 1 : Topic Selection And Proposal	31
3.1.2	Stage 2 : Data Collection	31
3.1.3	Stage 3 : Data Analysis	34
3.1.4	Stage 4 : Writing Conclusion	36

3.2	Research Questions	38
3.3	Population And Sampling	38
3.4	Summary	40

CHAPTER 4 DATA ANALYSIS

4.0	Introduction	41
4.1	Response Rate	41
4.2	Reliability Analysis	42
4.3	Demographic Analysis	43
4.3.1	Profession	44
4.3.2	Experiences	45
4.3.3	Highest Qualification	47
4.3.4	Type Of Project Involved	48
4.3.5	Involvement In Green Building	50
4.4	Factors That Drive Green Building Implementation	51
4.4.1	Cost Benefit	51
4.4.2	Environmental Problem	56
4.4.3	Government	59
4.4.4	Resources	62
4.4.5	Information And Understanding	67
4.5	Cost Impact Of Green Building Implementation	70
4.5.1	Initial Cost	70
4.5.2	Marketing And Branding Cost	72
4.5.3	Construction Cost	74

4.5.4	Lifecycle Cost	77
4.5.5	Others Related Cost	80
4.6	Summary	84
4.6.1	Factors That Drive Green Building Implementation	84
4.6.2	Cost Impact Of Green Building	90
4.6.3	Summary	94

CHAPTER 5 CONCLUSION

5.0	Introduction	97
5.1	Conclusion	97
5.2	Limitation Of Research	99
5.3	Recommendation	100
5.3.1	Recommendation For Future Research	100
5.3.2	Recommendation To Increase The Green Building Implementation	100

REFERENCES

APPENDICES

LIST OF TABLE

TABLE NO	TITLE	PAGES
2.1	Analysis Of Drive Factors Of Green Building	17
2.2	Analysis Of Drive Factors Of Green Building	18
2.3	Green Building Index Certification	26
2.4	Assessment criteria for Green Building Index	26
3.1	Rating In Likert Scale	35
3.2	Sample Size Needed For Given Population	39
4.1	Summary Of Respond Rate	42
4.2	Reliability Statistics	43
4.3	Respondent Profile Statistic	43
4.4	Distribution of Profession	45
4.5	Experiences In Industry	46
4.6	Highest Qualification Obtained	48
4.7	Type of project involved	49
4.8	Involvement In Green Project	51
4.9	Analysis Tax Exemption That Drive Most Company To Engage In Green Building Project	52
4.10	Analysis Of Change Demand For Green Product In Relation To Lower Life Cycle Cost	53
4.11	Analysis Of Green Building Can Reduce Utility Costs.	54
4.12	Costs Of Green Design, Construction, And Certification Are One Of The Greatest Barriers To The Adoption Of Sustainable Development	55
4.13	Analysis Of Premium Cost In Green Building	56
4.14	Analysis Of S Change In The Perspective Of Green Building	57
4.15	Analysis Of Green Building As The Initialize To Reduce Environmental Degradation	58
4.16	Analysis On The Requirement To Retooling Construction Model	59
4.17	Analysis Of Government Funding To Reduce The Cost Of Energy Consumption	60

4.18	Analysis On Regulation To Achieve Zero Carbon Emissions From All New Buildings	61
4.19	Analysis Of Tax Breaks For Green Buildings Program	62
4.20	Analysis Of Importance Of Expertise In The Area Of Green Building	63
4.21	Analysis On Green Building Materials And Equipment	64
4.22	Analysis Of Green Building Materials As Renewable Materials	65
4.23	Analysis Of Careful Use Of Materials Can Reduce Energy Consumption During The Manufacturing Process	66
4.24	Analysis Of Consideration When Selecting Green Materials	67
4.25	Analysis Of Availability Of Information Regarding Green Building Concept	68
4.26	analysis of understanding of green concept	69
4.27	Analysis Of Acceptance Of Green Product From Client	70
4.28	Analysis Of Premium Cost In Green Buildings	70
4.29	Analysis Of Certification Cost In Green Building	71
4.30	Analysis Of Marketing And Branding Cost In Green Building	72
4.31	Analysis Of Importance Of Communication In Green Building Implementation	73
4.32	Analysis Of Construction Cost Of Green Building	74
4.33	Analysis On Return On Investment For Green Building	75
4.34	Analysis Of Consultant And Government Fee When Implement Green Building practice	76
4.35	Analysis Of Used Of Green Building Design To Reduce Operation Cost	77
4.36	Analysis of Difficulty to Estimate Energy and Maintenance Cost of Green Building	78
4.37	Analysis Of Operation Cost Of Green Building	79
4.38	Analysis Of Reduction in Utility Cost In Green Building	80
4.39	Analysis Of Cost Of Certification As A Prove The Building Meet With The Specification	81
4.40	Analysis Of Commissioning Process For Certification In Green Building Practices	82
4.41	Analysis Of Commissioning As The Most Significant Soft Cost	83
4.42	Analysis Of The Importance Of Reassessment In Green Building Practice	84

4.43	Descriptive Statistics For Cost Benefit	85
4.44	Descriptive Statistics Of Environmental Problem	86
4.45	Descriptive Statistics Of Government	87
4.46	Descriptive Analysis For Resources	88
4.47	Descriptive Statistics Of Information And Understanding	89
4.48	Descriptive Statistics of Initial Cost	90
4.49	Descriptive Statistics of Marketing And Branding Cost	91
4.50	Descriptive Statistics of Construction Cost	92
4.51	Descriptive Statistics Of Life Cycle Cost	93
4.52	Descriptive Statistics Of Other Related Cost	94
4.53	Ranking Of Drive Factor Of Green Building Implementing	95
4.54	Ranking Of Cost Impact Of Green Building Implementation	96

LIST OF FIGURES

FIGURE NO	TITLE	PAGES
2.1	Aspect Of Sustainable Development	10
3.1	Flowchart Of Study	37
4.1	Distribution Of Profession	44
4.2	Analysis Of Experiences	46
4.3	Analysis Of Highest Qualification	47
4.4	Analysis Of Type Of Project Involved	49
4.5	Analysis Of Involvement In Green Building	50

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ABSTRACT

This research is discuss about the factors that drive the green building implementation and the cost impact of green building implementation. The first objective of this research are to identify the factors that drive the contractors to implement green building practices in their project at the same time to analysed the cost impact when implementing green building practice in their project. Two type of data collecting technique are used in order to collect the data on the topic. The primary data are obtained through the survey of questionnaires that have been send to the total of 112 G7 contractors registered under CIDB located in Lembah Klang. Secondary data are collected through the website, reading the journal, articles and books in library. Based on the data analysis in chapter 4, in can be conclude that most of the respondent are agree that the issues of environmental problem including air pollution, global warming and carbon dioxide emission is the main factor that drive the contractors to implement green building practice. Meanwhile, the finding also shows that the green building practice will hugely give an impact on the lifecycle cost of the building such as reduce operation cost and utility cost. As the conclusion, in order to reduce the impact of built environment on people and environment, green building concept is the most applicable approaches.

ABSTRAK

Kajian ini membincangkan tentang faktor-faktor yang mendorong pelaksanaan bangunan hijau dan kesan pelaksanaan bangunan hijau terhadap kos. Objektif pertama kajian ini adalah untuk mengenal pasti faktor-faktor yang boleh mendorong kontraktor untuk melaksanakan amalan bangunan hijau dalam projek mereka dan pada masa yang sama untuk menganalisis kesan terhadap kos apabila melaksanakan amalan bangunan hijau. Dua jenis teknik pengumpulan yang digunakan untuk mengumpul data mengenai kajian yang dilakukan. Data primer diperolehi melalui kajian soal selidik yang telah dihantar kepada sejumlah 112 kontraktor G7 yang berdaftar di bawah CIDB yang terletak di Lembah Klang. Data sekunder dikumpulkan melalui laman web, pembacaan jurnal, artikel dan buku-buku di perpustakaan. Berdasarkan data yang dianalisis dalam bab 4, kesimpulan dapat dibuat bahawa kebanyakan responden bersetuju bahawa isu-isu masalah alam sekitar termasuklah pencemaran udara dan pemanasan global adalah faktor utama yang mendorong kontraktor untuk melaksanakan amalan bangunan hijau. Sementara itu, hasil kajian juga menunjukkan bahawa amalan bangunan hijau akan memberikan kesan yang besar ke atas kos kitaran hayat bangunan seperti mengurangkan kos operasi dan kos utiliti. Kesimpulannya, dalam usaha untuk mengurangkan kesan pembangunan terhadap manusia dan alam sekitar, konsep bangunan hijau adalah pendekatan yang paling berkesan.

CHAPTER 1

INTRODUCTION

1.0 INTRODUCTION

Over the last few decades, sustainable building practice become more prominent in Malaysia. Conservation of natural resources while reducing the threat to the environment such as global warming and greenhouse gases become the main focus of sustainable development. United Nations (1987) describes that “the term of sustainable development is a group of technique to reduce poverty, create the reasonable standards of living, fulfil the basic requirement of all people, and design sustainable political practices at the same time taking the steps necessary to evade irreversible impact to the natural environment in the long-term”.

Green building term is common when talked about sustainable development. Green buildings are designed to minimise and mitigate the largely effect of the built environment on both the environment itself and human health by effectively using the water, energy and other important resources. Secondly, secure occupant safety and health and improving worker efficiency and third is minimise the waste, contamination and environmental degradation through proper maintenance , better designand effective operation (Frej and Browning, 2005) .

In order to increase and encourage the use and application of sustainable development and green building practices, Malaysia government has launched a new concept in construction industry which is known as green building concept that focused on environmental friendly. Malaysia government has introduced National Green Technology Policy (NGTP) in 2009 as the sign that the government are really serious to implement green building concept in this country. These include among others intensification of green technology research and innovation towards commercialization, promotion and public awareness of green technology .

Typically for construction of building, the government encourage the utilization of renewable energy (RE) and energy efficiency (EE) in buildings such as solar photovoltaic (PV), rainwater harvesting, phasing out of incandescent light, and the application of green building index .

According to Frej and Browning 2005, green building is a result of a design with better sitting, construction, maintenance, operation and removal which focuses on maximising the efficiency of resource use including the energy, water, and materials while reducing building impacts on human safety and health and the environment through the building's lifecycle. Different kind of materials and equipment will be used in the construction of green building that make their appearances also differ from other normal building that we always seen . For example, in green building they more prefer to used solar panel to save the energy and also always used recycle material in their construction since the natural resources are scarce .

1.1 PROBLEM STATEMENT

According to Horvath (1999), construction industry can be considered as one of the most important industries that cause degradation of the environment. Threat to environment and human being such as global warming and increasing of greenhouse gases are primary contributed by construction industry. Furthermore, according to the observation made by Schmidt (2000), one-third of ecological disasters are the result form building activity. Thus, it can be conclude that construction activities have direct impact on both people and environment, as it leads to the change in the state or condition of such environment in terms of not only the quality but also the stock of natural resources.

In order to overcome this problem, new practice is introduced known as green building practices that will lessen the threat to the environment and improve quality of life. Malaysia is also include as one country that show interest in green building practices. The former prime minister of Malaysia Y.A.B Tun Abdullah Ahmad Badawi, launched the Malaysian Green Building Mission in march 2007 with the objectives of increasing the level of awareness, promoting and consolidating effort in achieving sustainable development in construction industry in Malaysia .

However, our country still very much lacking behind in green building development as compared to other Asia Pacific countries such as Australia, Japan, and Singapore. Perhaps the most common issued faced by contractor, professional designer and owner is that they fail to understand that there is a huge difference between conventional construction project and green construction project . A lot of effort has been poured in order to encourage this green building practices in Malaysia and finally show a good result by the establishment and construction of few green building which have been built based on the concept of energy efficiency such as LEO (low energy office) Building of the Ministry of Energy, Water and Communications in Putrajaya and Pusat Tenaga Malaysia (PTM) .